Factors Contributing to Poor Antiretroviral Therapy adherence among Patients at Jwaneng Mine Hospital MASA Clinic in Botswana

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Assignment submitted in partial fulfilment of the requirement for the degree of Master of Philosophy (HIV/AIDS Management) at Stellenbosch University.

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March 2011

DECLARATION

By submitting this assignment electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Thatayotlhe Colleen Maokisa Date: March 2011

Acronyms

AIDS	-	Acquired Immunodeficiency Syndrome
ART	-	Anti Retroviral Therapy
BAIS	-	Botswana AIDS Impact Survey
Co-formulated drugs	-	Three drugs combined in one tablet
CSI	-	Corporate Social Investment
DOT	-	Daily Observed Therapy
HIV	-	Human Immunodeficiency Virus
KITSO	-	Knowledge, Innovation and Training Shall
Overcome	-	HIV/AIDS
MASA	-	The name given to the Botswana Government ART Programme
Med	-	Medications
NACA	-	National AIDS Coordinating Agency
PLWHA	-	People Living with HIV/AIDS
UNAIDS	-	United Nations Agency for HIV/AIDS
WHO	-	World Health Organisation

Explanation of Terms

Adherence- The extent to which a client's behaviour coincides with the prescribed health care regimen as agreed through a shared decision making process between the client and the health care provider (KITSO Manual, 2000). For this study, adherence will be defined as taking all medications at the correct times, in the appropriate quantities and in line with additional instructions regarding food or drug interactions (Kimou, Konakou & Assi, 2006).

Factors that contribute to poor adherence to ART- This refers to conditions that hinder the client from taking ART.

Near to the health facility- Staying within a radius of 39 kilometres from Jwaneng Mine Hospital.

Far from the health facility- Staying within a radius of 40 to 80 kilometres from Jwaneng Mine Hospital

Very far from the health facility- Staying above a radius of 80 kilometres from Jwaneng Mine Hospital

MASA- The name given to Botswana Government ART Programme

ACKNOWLEDGEMENTS

The Researcher would like to acknowledge the contribution made by participants by completing questionnaires and those who agreed to be interviewed. I am especially indebted to Mr. Burt Davis, my Supervisor, for his support, guidance and encouragement while I worked on this dissertation.

I would also like to thank The Ministry of Health (Health Research Unit) and Jwaneng Mine Hospital for giving me permission to conduct the research. My appreciation also goes to my family and friends for the support and understanding since at times I had to miss social gatherings because of commitment of the MPhil Programme.

Lastly I would like to express my sincere gratitude to God Almighty who led and guided me through this programme even at difficult times.

ABSTRACT

This study establishes factors that contribute to poor ART adherence. It was done at Jwaneng Mine Hospital MASA Clinic in Botswana.

A qualitative study was done using a structured questionnaire which included open and close-ended questions. A total of 36 people (17 male and 19 female) who are HIV positive and on ART participated in the study. Participants were aged 21 years and above. Data was analysed using qualitative method. Frequencies were used for analysis of close-ended questions. Themes were identified in open-ended questions.

The responses given by the patients gave an insight on factors that may be contributing to poor ART adherence among patients at Jwaneng Mine hospital MASA Clinic although the study population was too small to make definite conclusions. In this study it was revealed that the following factors may play a role in poor ART adherence: Transport issues, Forgetfulness and long waiting hours. The main finding in this research was that many factors thought to be contributing to poor adherence do not seem to have influence on ART adherence but the fact of the matter is general ART adherence of patients at Jwaneng Mine Hospital is low.

To enhance good adherence, it is of paramount importance that ART be rolled-out even to the lowest level health facilities, more nurses should be trained on prescribing and dispensing of ART, and patients should be given at least two months supply of ART. Lastly, it would be of importance to conduct a similar type of study in the future on a larger scale to verify the results of this study.

OPSOMMING

Hierdie studie is gerig op die vasstelling van feite wat tot die swak nakoming van Anti-retrovirale Behandeling (ARB) bydra. Dit is by die Jwaneng-mynhospitaal se Masa-kliniek in Botswana uitgevoer.

'n Kwalitatiewe studie is gedoen deur gebruik te maak van 'n gestruktureerde vraelys wat oop en geslote vrae ingesluit het. Ses en dertig mense in totaal – 17 mans en 19 vroue – wat MIV-positief en ARB-behandeling ontvang, het aan die studie deelgehad. Hulle ouderdom was 21 jaar en ouer.

Data wat ingewin is, is deur gebruikmaking van die kwalitatiewe metode geanaliseer. Frekwensies is toegepas vir die analise van geslote vrae en temas in oop vrae is geïdentifiseer.

Antwoorde wat in die vraelyste verstrek is, het insig gebied oor faktore wat moontlik sou kon bydra tot swak ARB-nakoming onder pasiënte in die MASA-kliniek van die Jwaneng-mynhospitaal, hoewel die groep wat vrae beantwoord het te klein was om besliste gevolgtrekkings te maak. Uit die studie het dit egter geblyk dat die volgende faktore moontlik 'n rol in die swak nakoming van ARB kan speel: vervoeraangeleenthede, vergeetagtigheid en lang wagure. Die hoofbevinding uit die navorsing was dat vele faktore wat aanvanklik gemeen is tot swak ARB-nakoming bydra, nie so 'n groot rol en omvang het nie – die feit van die saak blyk te wees dat die algemene nakoming van ARB aan betrokke pasiënte in Botswana se Jwaneng-mynhospitaal eenvoudig nie na wense is nie.

Om deeglike nakoming te bevorder, is dit van die uiterste belang dat ARB na selfs die laagste vlak van gesondheidsfasiliteite uitgebrei word, dat groter getalle verpleegters in die voorskryf en toediening van ARB opgelei word, en dat aan die betrokke pasiënte minstens 'n twee maande-voorraad van ARB gegee word. Ten slotte sou dit van belang wees om 'n soortgelyke tipe studie soos dié, maar wel op groter skaal, in die toekoms uit te voer om hierdie een se bevindings te staaf.

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CHAPTER 1: INTRODUCTION

This chapter is made up of the background and rationale, research problem, significance of the study, aim and objectives; Chapter 2 summarises the review of literature; Chapter 3 explain how the study was conducted including the methods that were used to get information; Chapter 4 addresses the findings of the study and Chapter 5 gives conclusion and recommendations that can improve the ART Programme in the future.

1.1 Background and Rationale/Everyday Problem

HIV/AIDS has impacted negatively on Botswana in many different ways. The population in child-bearing age, i.e. 15 to 49 years is the most affected. According to BAIS iii (2009), Botswana has a population of about 1 802 959 inhabitants. The report shows that the national prevalence rate of HIV infection is 17.6%.The prevalence rate of Jwaneng where the study will take place is15.7%.

Botswana like other countries uses ART as one of the strategies to mitigate HIV/AIDS. This is a good effort because morbidity and mortality have been drastically reduced and availability of ART has transformed a once fatal disease into a manageable chronic illness. The Government of Botswana has been offering free ART since 2002 and the programme has been named MASA which is a Setswana name for “dawn” which symbolises hope. Botswana is one of the countries with high prevalence rate and before the inception of the ART programme people were dying in high numbers. The MASA programme has brought hope to thousands of Batswana.

At MASA clinics, patients are assessed to determine eligibility for ART. The eligibility is defined as HIV-positive with either an AIDS defining illness, CD4 of 200 or, or being a child. The CD4 has now been increased to 250 or less according to Botswana National HIV/AIDS Guidelines (2008).

The total enrolment of clients in the MASA Programme stood at 106 357 by the end of March, 2009 (NACA Quarterly Report, March, 2009). Jwaneng Mine Hospital MASA Clinic has a total of 980 patients in treatment (ART Site Report, December, 2010).

Jwaneng Mine ART Clinic offers ART to Jwaneng residents and those from the surrounding areas. It is part of the CSI programme for Debswana. The clinic is run by 2 doctors, 5 nursing staff, 1 nurse orderly and a hospital clerk. The writer is a professional nurse working at the MASA ART Clinic.

Before patients are commenced on ART, they undergo extensive counselling related to HIV/AIDS and the use of HAART in its mitigation. The topics include action, side effects, interaction with other drugs and implications of not adhering to treatment. Despite all this effort, patients continue not to adhere to treatment.

The clinic started offering ART to residents of Jwaneng and surrounding areas in April, 2003 as a way of taking services to the people. Initially people were getting treatment from Gaborone which is very far and as such it was not possible to access the treatment. The clinic has enrolled 3286 patients to date and 2828 patients were commenced on treatment (ART Site Report December, 2010). Out of this number, about 4.5% have been switched to second line treatment. Second line treatment refers to the treatment that the patient is switched to if HIV becomes resistant to the drugs that he/she was originally started on. Although the percentage seems to be low, it really causes concern as there is a possibility that some patients might be spreading the resistant virus. Poor adherence is one critical factor that can reduce the potency of therapy and lead to viral resistance. On review of records of nurses doing counselling, it reflects that most of the patients fail treatment because of poor adherence. This has made it necessary for one to establish why clients do not adhere to ART.

Adherence issues have to be tackled and if not, there is a possibility that clients will develop resistance to some drugs. Once a person develops resistance, drug sensitivity tests have to be performed and these are very expensive. The drugs that are prescribed is often expensive and their side effects extreme which can result in clients not taking the treatment as prescribed.

1.2 Research Problem

In order to achieve effective treatment and realise the benefits of ART, it is very critical for patients to strictly adhere to treatment instructions. It is a big challenge for patients to stick to instructions for long-term diseases and as such patients end up discontinuing treatment because they do not see themselves as sick. Majority of patients admitted at Jwaneng Mine Hospital Medical Ward who are on ART have history of not adhering to treatment. As such this has to be looked into to find out why they do not adhere to the treatment.

It is not known why patients do not adhere to ART and hence there is a need to establish that. If the adherence issue is not addressed, there is a possibility that clients will develop resistance, drug sensitivity tests have to be performed and these are very expensive. The drugs which one is usually switched to are also very expensive and their side effects are unbearable which can result in clients not taking treatment as prescribed.

1.3 Research Question

What are the factors that contribute to poor adherence to ART among patients at Jwaneng Mine Hospital MASA Clinic?

1.4 Significance of the Study

The study will reveal factors that contribute to poor ART adherence among clients at Jwaneng Mine Hospital MASA clinic and this will aid in coming up with specific strategies which will target poor adherence to ART. The findings will also help identify other areas of research with regard to the ART Programme since currently there is nothing done in the area of research in Debswana although it is one of the companies which are known to be doing well as far as HIV/AIDS is concerned.

1.5 Aim

To establish the factors that contributes to poor ART adherence.

1.6 Objectives

- To establish common problems with ART adherence
- To identify problems faced by clients who do not adhere to ART
- To provide guidelines for improvement of adherence support, if necessary

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Literature review refers to the activities in identifying and searching for information on a topic and developing an understanding of the state of the topic (Polit & hungler, 1999). This assists one to appreciate the problem more.

Antiretroviral therapy has greatly improved the overall health of individuals living with HIV/AIDS. Several studies have reported increased virologic and immunologic effectiveness of ART and the consequent reduction of mortality and morbidity associated with HIV/AIDS (Lima, et al, 2009). Perfect adherence to HIV medications is critical for successful treatment, particularly for prevention of viral replication (Safren, et al, 2001).Along the same lines, Russel, et al (2004), reported that the length and the quality of life among persons living with HIV have dramatically changed with the advent of ART. Regimens have been simplified in recent years (e.g. fewer doses, less food restrictions) and are generally more tolerable, treatment still requires high levels of adherence to avoid virological failure (Lucas, 2005)and there are many factors that contribute to poor adherence.

In the sections to follow, we will firstly look at the global picture pertaining to HIV treatment and then focus more specifically on HIV treatment in Botswana, as that is where this study is based. Then, factors associated with poor adherence identified in the literature will be identified and scrutinised. The chapter will end with a summation of the discussed literature.

2.2 Global Update on HIV Treatment

The number of annual AIDS-related deaths worldwide is steadily decreasing from the peak of 2.1 million in 2004 to an estimated 1.8 million in 2009. The decline reflects the increased availability of ART, as well as care and support, to people living with HIV, particularly in middle-and-low- income countries; it is also a result of decreasing incidence of HIV in the late 1990s (WHO/UNAIDS, 2010).

The effects are especially evident in sub-Saharan Africa, where an estimated 320 000 (or 20%) fewer people died of AIDS-related causes in 2009 than in 2004, when ART began to be dramatically expanded (WHO/UNAIDS, 2010).

The following are HIV treatment key findings of the WHO/UNAIDS Report (2010):

- An additional 1.2 million people received ART in 2009, bringing the total number of people receiving treatment to low-and-middle-income countries to 5.2 million, a 30% increase over 2008.
- At the end of 2009, 36% (about 5.2 million) of the 15 million people in need of ART were receiving ART in low-and-middle-income countries.
- Fewer people were dying of AIDS-related causes. About 14.4 million life-years have been gained by providing ART since 1996.

The number of health facilities delivering ART increased by 36% in 2009, and the average number of people receiving ART per health facility rose from 260 in 2008 to 274 in 2009, according to data submitted by 99 countries (WHO/UNAIDS, 2010). Half or more of all adults eligible for treatment were receiving ART in 29 of the low-and-middle-income countries for which data were available by December, 2009. Eight countries – Botswana, Cambodia, Croatia, Cuba, Guyana, Namibia, Romania and Rwanda were able to achieve ART coverage of 80% or more (WHO/UNAIDS, 2010).

2.3 HIV Treatment in Botswana

According to Botswana National HIV/AIDS Guidelines (2008), the following are goals of ART:

- To restore immunologic function and quality of life, and to increase life expectancy by decreasing morbidity and mortality.
- To achieve Viral Load of less than 400 copies/mL by no less than 6 months after commencement of ART.

By the end of 2005, it was estimated that 270 000 people were living with HIV in Botswana. This country not only did it exceed 3 by 5 target, but also the government's

target of 55 000 (WHO/UNAIDS, 2006). At the end of 2006, about 84 000 people were receiving ART, which was more than 95% of those in need (WHO/UNAIDS, 2007).

2.4 Studies conducted around the globe to determine factors related to poor ART adherence

2.4.1 Transport factors

Transport costs have been associated with poor adherence to ART. ART is available mostly in cities, towns and major villages. For people in rural areas to access ART, they have to travel long distances and this becomes a problem with those of low socioeconomic status. This is supported by Hardon, et al, (2006) who state that although ART is free, transport costs are an important reason why ARV users fail to visit the health facility for follow-up and refill.

2.4.2 Excessive use of alcohol and other drugs

Excessive alcohol consumption has been found to be one of the determinants of poor adherence. A study conducted by Morajelo, Ines, Marcos, Fuetes, and Luma, (2006), on factors influencing ART adherence in Spain among 143 patients was done and factors which could influence adherence scrutinised. The findings indicated that clients with behavioural and psychosocial problems put them at risk of not adhering to ART. Alcoholism is regarded as one of the behavioural factors. This strengthens the fact that alcohol plays an important part in non-adherence to ART. The same sentiment is shared by Royal, Cohn, Kwait, Kidder, Wolitski, Aidala, and Holtgrave, (2006) in their study which found that alcohol use problems are associated with patients missing their doses.

A large-scale study of homeless/unstably housed HIV positive individuals from three cities in the United States namely Baltimore, Chicago and Los Angeles which was conducted in 2004/5 revealed that participants who used drugs were more likely to be non-adherent than were non-users (Stall, Royal, Cohn, Kidder, Aidala, Holtgrave, Friedman, Marshall, Courtney-Quirk, and Wolitski, 2006).

2.4.3 Religion

Religious convictions have been indicated and believed to play a pivotal role in ART adherence. In a study conducted by Sharon, et al (2006) on attitudes and beliefs surrounding HIV disease and adherence to ART, the results revealed that multiple factors influence adherence to medical treatment. It showed that certain religious practices are positively associated with adherence, and on the other hand certain beliefs are negatively related to ART adherence. It is therefore very important that religious beliefs and practices are addressed during counselling as part of medical care.

2.4.4 Hunger

Some patients do not adhere to ART because of hunger. Once a person is commenced on treatment and the condition improves, even the appetite improves. If the medication is taken on an empty stomach, then it can not be tolerated. According to Zuurmond (2008), in a study on Adherence to ART- challenges and successes, the respondents stated that they were not taking treatment because they were hungry. So to support better adherence, medications must be taken on a full stomach, and proper nutrition can help lessen some of the side effects as well as strengthening general resilience.

2.4.5 Stigma

ART users experience stigma, discrimination and lack of support. In a study conducted by Hardon, et al, (2006), it was found that some ART users reported that after disclosing their HIV positive status, they lost their job (Tanzania); were abandoned or treated badly by partners (Botswana); or was isolated by community members (Uganda). With such fears ART users usually decide to hide their HIV status from colleagues, friends and others.

2.4.6 Relationships

Interpersonal relationships can affect adherence to ART. Lack of trust or dislike of a health care provider by the patient can affect adherence to ART. It is therefore of paramount importance that a good relationship is built between the patient and the healthcare provider as this will bring about trust. This is supported by Russel, et al (2004)

who stated that adherence included knowledge of the provider, the way the provider interacts personally with the patient, and practice styles of the provider that denote such characteristics as caring, follow-through and taking time with the clients.

2.4.7 Side Effects

These are usually regarded as undesirable secondary effects which occur in addition to the desired therapeutic effects of a drug or medication (Horstmann and McHugh, 2010). These include headache, abdominal pains, diarrhoea, nausea, vomiting, disturbed sleep, weird dreams and rash on the body. Side effects of ART can also make patients miss their doses or totally stop taking them even if they were given the relevant information because of the discomfort. This is supported by Hardon, et al, (2006) who state that although patients are highly motivated to take ART as prescribed, constraints such as side effects undermine their intentions to adhere.

2.4.8 Waiting Time

There are factors which are viewed as challenges to ART in Africa. These include waiting time. Studies that were conducted in Botswana, Tanzania and Uganda by Hardon, Davey, Gerrits and Hodgkins (2006), identified that long waiting hours may discourage patients from going to clinics. 42% of workers interviewed in Tanzania found waiting time as a problem. In Botswana 57% of the respondents reported that they spent on average four hours at the health facility with the longest waiting time having been twelve hours. It is therefore of paramount importance that ART be rolled to facilities near to where the majority of the communities stay to relieve congestion and thereby reducing the waiting time at the facilities.

2.4.9 Dosing schedules and food intake patterns

ART may require different dosing schedules, different food intake patterns (some should be taken with meals, some with fatty foods, and some with non-fatty foods). Patients on ART are therefore required to adhere to a complex and frequently confusing combination of medications (Safren, 2001). ART also requires patients to take pills for long periods

of time, frequently in the absence of symptoms (Safren, 2001).Some patients might end up stopping the treatment as they think they are cured.

2.4.10 Summary

Chesney, et al (2000), have classified factors which contribute to poor ART adherence into four groups:

1) Patient factors which include age, alcohol and substance use, psychosocial issues, patient's belief, forgetfulness and confusion;

2) regimen-related factors such as complex regimen, number of pills, food requirements and side effects;

3) Interpersonal factors such as the doctor-patient relationship and social support lack of trust and confidence; and

4) Clinical setting and service delivery factors such as poorly motivated, unfriendly, inconvenient appointments and inadequate counselling.

Taking into consideration Chesney's classification and the discussed factors which contribute to poor ART adherence, the following factors which contribute to poor adherence will be further investigated in this study to see if they are applicable to the study population at hand: long waiting hours, hunger, transport costs, stigma, side effects, lack of appropriate counselling, excessive alcohol intake, religion, lack of support, different dosing patterns, patient-health provider relationships and forgetfulness.

CHAPTER 3: RESEARCH DESIGN AND METHODS

3.1 Target Group and Sampling Method

The study was conducted at Jwaneng Mine Hospital ART Clinic in Botswana. Jwaneng Town is situated on the south western side about 160 kilometres from Gaborone, the capital city of Botswana. It is a diamond mining town. Jwaneng Mine is owned by Debswana Diamond Company which is a joint venture between De Beers and the Government of the Republic of Botswana.

The population studied was HIV positive clients an ART who are enrolled in the MASA Programme at Jwaneng Mine Hospital. They were aged 21 years and above. There were 36 patients who were included in the survey.

The sample was drawn from the 980 patients who are already on ART and were selected as they visited the clinic for different services. Simple random sampling method was used to select participants of the study. Since a list of patients booked for each day appears in the Patient Information Management System (PIMS), it was used as the sampling frame. Patients below 21 years of age and those not on anti retroviral therapy were excluded.

3.2 Data Collection

A questionnaire was designed by the Researcher and had closed and open-ended questions. It was distributed to patients to complete. For participants who had difficulty in completing the questionnaire on their own or preferred to be interviewed, the questionnaire was used as interview guide.

3.3 Questionnaire

The questionnaire has two sections. The first section is on demographic data and the second section had questions on adherence. The questions on adherence are divided as follows:

- Profile of patients on ART
- Adherence reminders

- Storage
- Transport factors
- Stigma factors Health care provider factors
- Practice of safe sex
- Additional factors

3.4 Data Analysis

Data has to be analysed in some systematic fashions so that trends and patterns of relationships can be identified in order to obtain meaningful answers to research questions. According to Polit and Hungler (1999), the purpose of data analysis regardless of the type is to impose some order on a large body of information so that data can be synthesised, interpreted and communicated in a research report. Analysis on the other hand refers to the process of categorising, ordering, manipulating and summarising the data to derive a meaning or answers to the research questions (Kerlinger, 1992). Analysis assists the researchers to make inferences from the data or sample to the general population.

In this study, a qualitative and quantitative approach will be employed. Frequencies and descriptive statistics will be used to analyse responses to questions.

3.5 Ethical Considerations

Permission was sought from Management of Jwaneng Mine Hospital and the Ministry of Health, specifically from the Health Research and Ethics Unit. The researcher got consent from the participants and they were assured that information obtained from them will be treated confidentially. No names were obtained during data collection. Only the researcher interviewed participants. No incentives such as money were given to participants.

CHAPTER 4: KEY FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of a qualitative study, which establishes factors that contribute to poor ART adherence. Section 1 comprises of demographic characteristics of participants and Section 2 is made up of questions on adherence and has been categorised as follows:

- Questions 1 to 4 address patients' profile
- Questions 5 to 6 address Adherence reminders
- Question 7 addresses storage of ART
- Questions 8 to 9 address transport issues
- Questions 10 to 11 address stigma issues
- Questions 12 to 15 address Health care provider factors
- Question 17 addresses safe sex practice
- Questions 18 to 20 address additional factors

4.2 Demographic Characteristics of Participants

4.2.1 Age Distribution

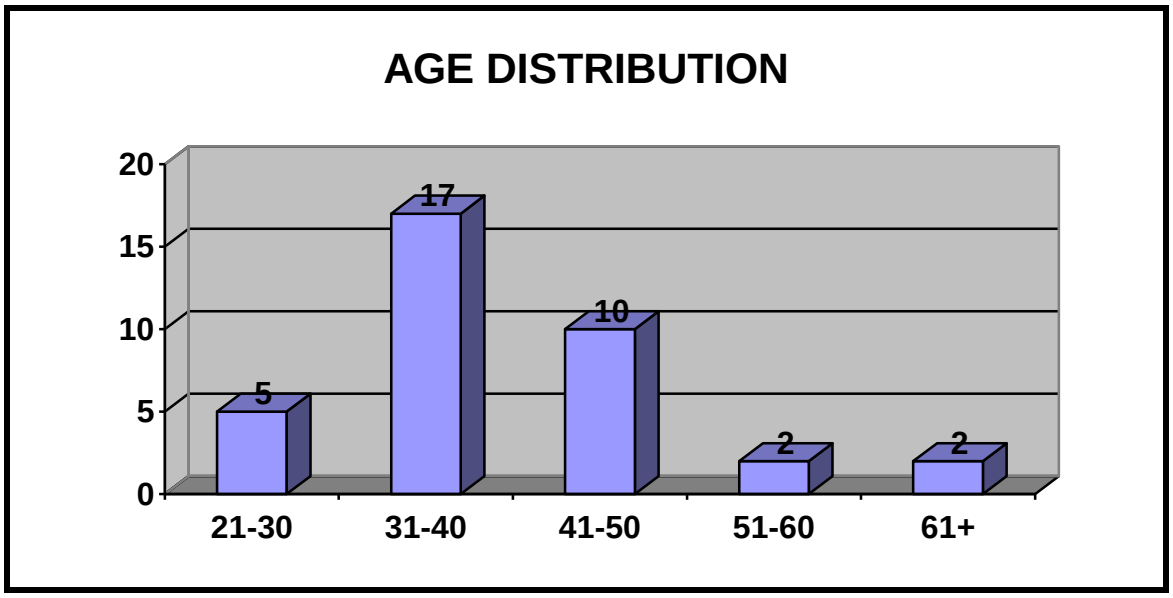

Figure1: Bar chart depicting the age distribution of respondents

The age distribution of all respondents is as follows:

21 to 30 years of age	:	13.9%
31 to 40 years of age	:	47.2%
41 to 50 years of age	:	27.8
51 to 60 years of age	:	5.6%
61 years and over	:	5.6%

As it can be seen from Figure 1, most respondents were between the ages of 31 and 40. The age distribution of participants is representative of the different age groups registered at Jwaneng Mine Hospital MASA clinic.

4.2.2 Gender Distribution

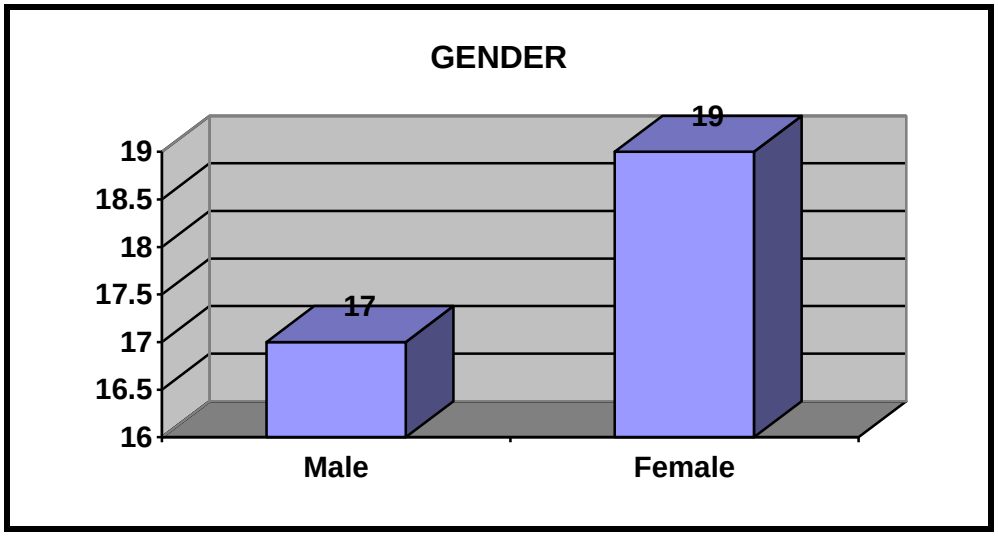

Figure 2: Bar chart indicating gender distribution of participants

Gender of all respondents was represented as follows:

- Male : 47.2%
- Female : 52.8%

As shown in Figure 2, the gender of both sexes is evenly distributed in this survey.

4.2.3 Marital Status

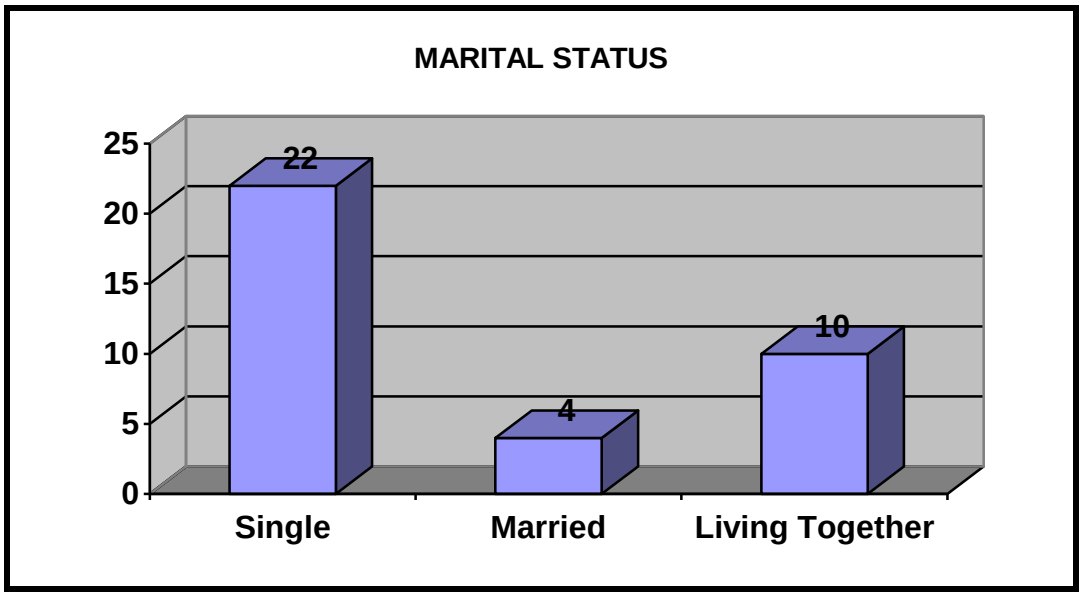

Figure 3: Bar chart showing marital status of respondents

The marital status of all respondents is as follows:

- Single : 61.1%
- Married : 11.1%
- Living Together : 27.8%

As seen from Figure 3, most participants are single. It is not known if partners of respondents have tested for HIV and if positive whether they have enrolled at the Jwaneng Mine Hospital MASA clinic. It is also not known if partners have also participated in this study.

4.2.4 Educational Level

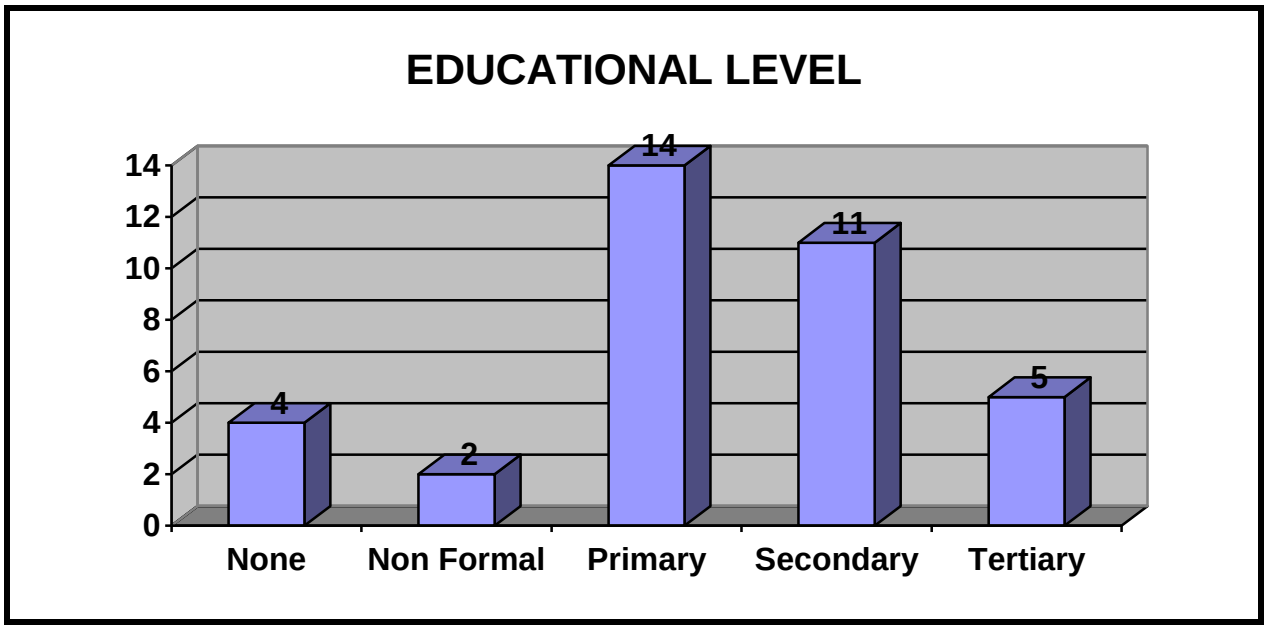

Figure 4: Bar Chart depicting educational level of respondents

The educational level of all participants is as follows:

None	:	11.1%
Non Formal	:	5.6%
Primary	:	38.9%
Secondary	:	30.6%
Tertiary	:	13.9%

Most respondents received either primary or secondary education. It seems that most participants received good education.

4.2.5 Occupation

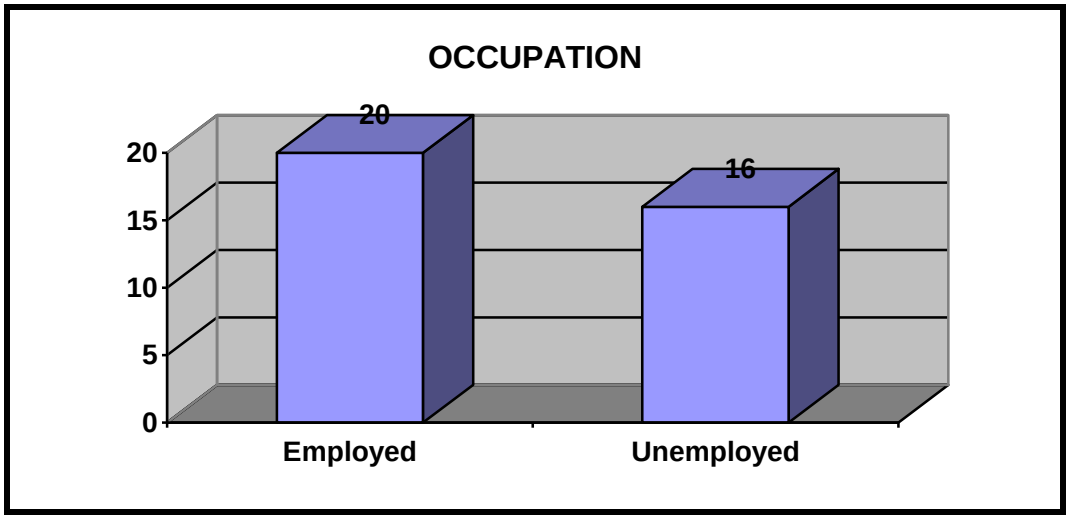

Figure 5: Bar Chart showing employment status of respondents

The occupational status of participants is as follows:

- Employed : 55.6%
- Unemployed : 44.4%

As it can be seen from Figure 5, most respondents are employed.

4.2.6 Religion

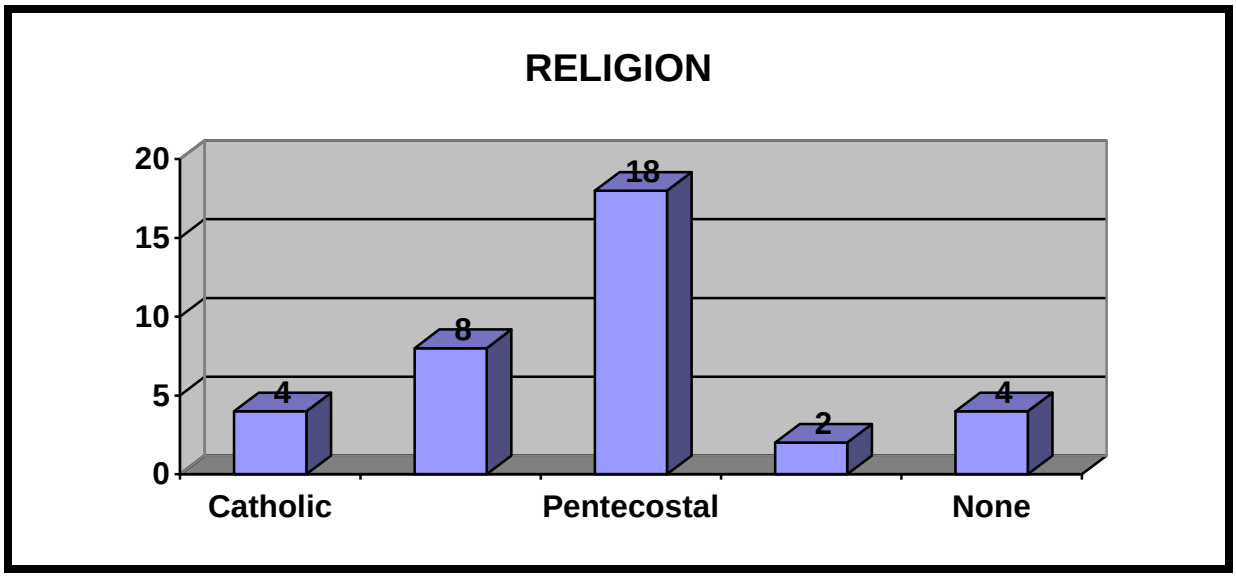

Figure 6: Bar Chart indicating religion of participants

The respondents were split along the following religious affiliations:

- Catholic : 11.1%
- Protestant : 22.2%
- Pentecostal : 50%
- Other : 5.6%
- None : 11.1%

As shown in Figure 6, the majority of participants belong to Pentecostal churches.

4.2.7 Residence

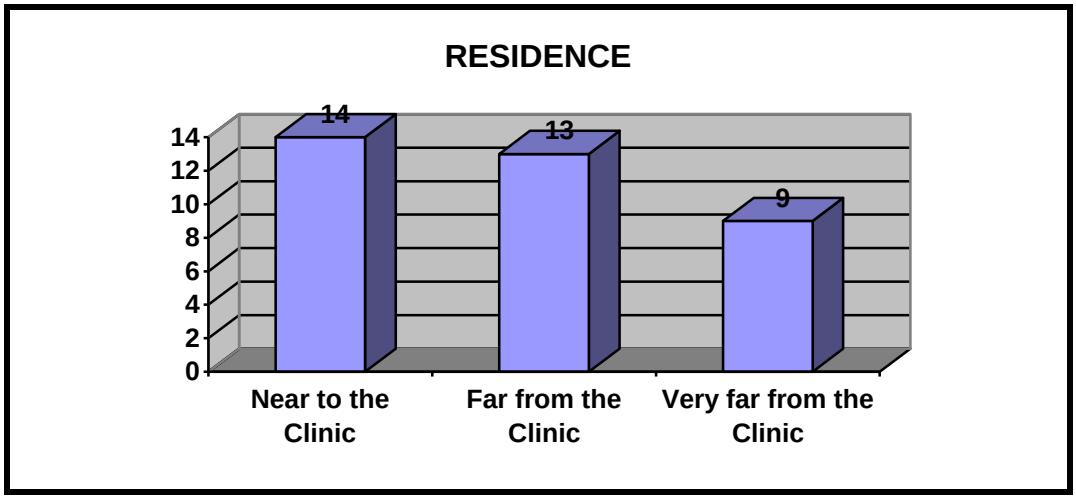

Figure 7: Bar Chart showing how far participants stayed from the ART site

The distance between participants' residence and clinic was represented as follows:

- Near to the clinic : 38.9%
- Far from the clinic : 36.1%
- Very far from the clinic : 25%

As seen form Figure 7, most of the respondents stay far or very far from the ART site.

4.3 Profile of Patients on ART

4.3.1 Participants' years of ART initiation

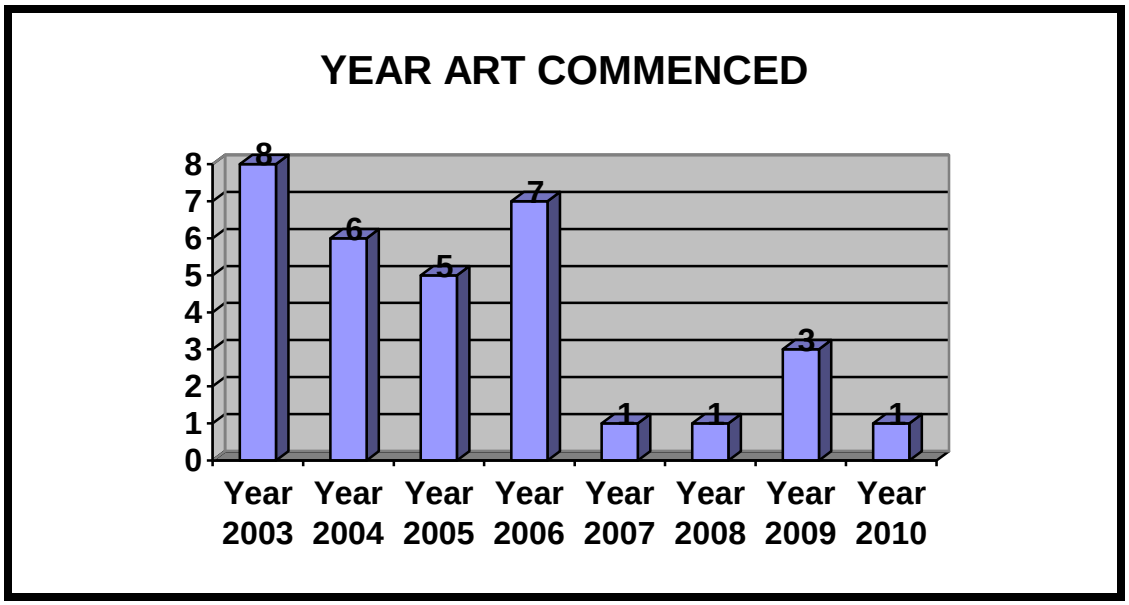

Figure 8: Bar Chart depicting the year in which each of the patients were started on ART

On being asked when they started ART, These are the responses that the respondents made:

- 2003 : 22.2%
- 2004 : 16.7%
- 2005 : 13.9%
- 2006 : 19.4%
- 2007 : 2.8%
- 2008 : 2.8%
- 2009 : 8.3%
- 2010 : 2.8%

From Figure 8 above, it shows that most of the participants have been on treatment for a long time.

4.3.2 Drug Frequency

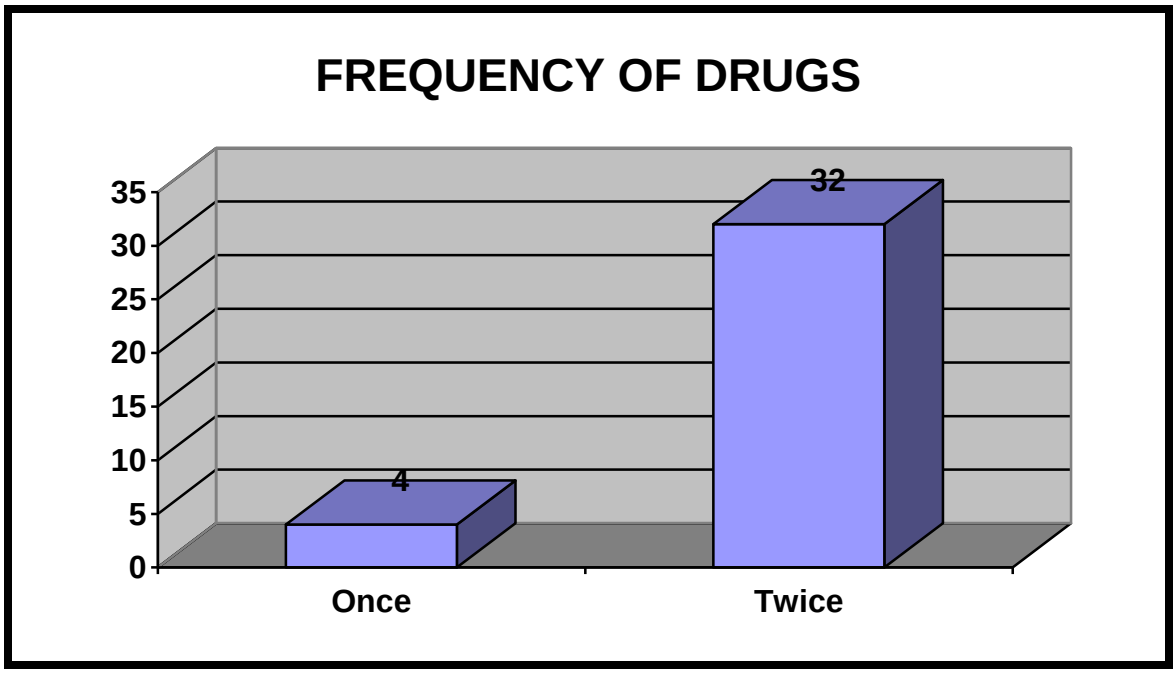

Figure 9: Bar Chart depicting how frequent ART is taken by patients

As seen from Figure 9, the majority of respondents take treatment twice daily

4.3.3 Number of tablets taken in a day

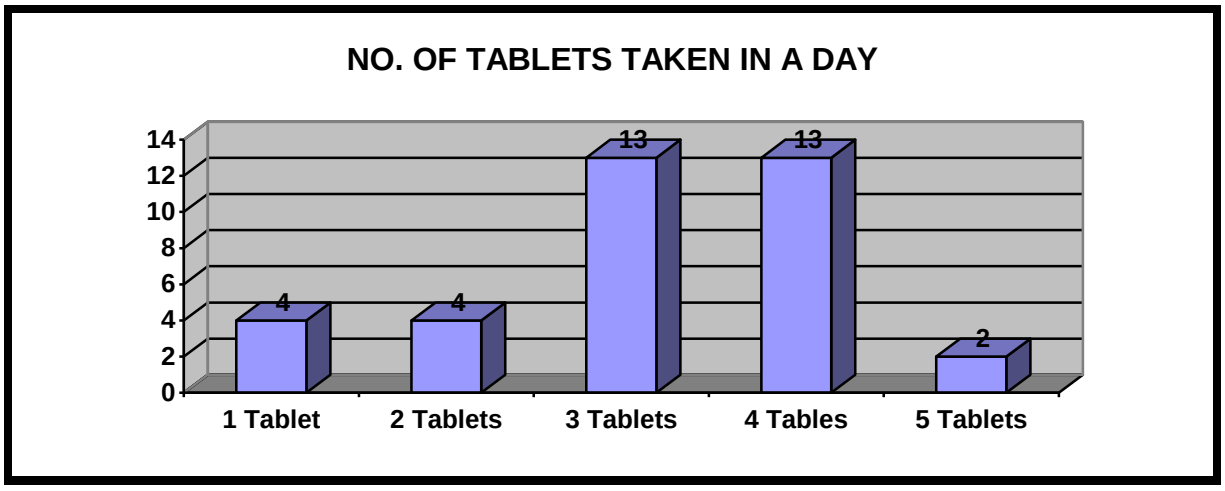

Figure 10: Bar Chart showing the number of tablets taken a day by each patient

On being asked how many pills participants take in a day, this is how they responded:

One tablet	11.1%
Two tablets	11.1%
Three tablets	36.1%
Four tablets	36.1%
Five tablets	5.6%

As shown in Figure 10, majority of the patients take 3 and 4 tablets in a day.

4.3.4 Problems experienced with medications

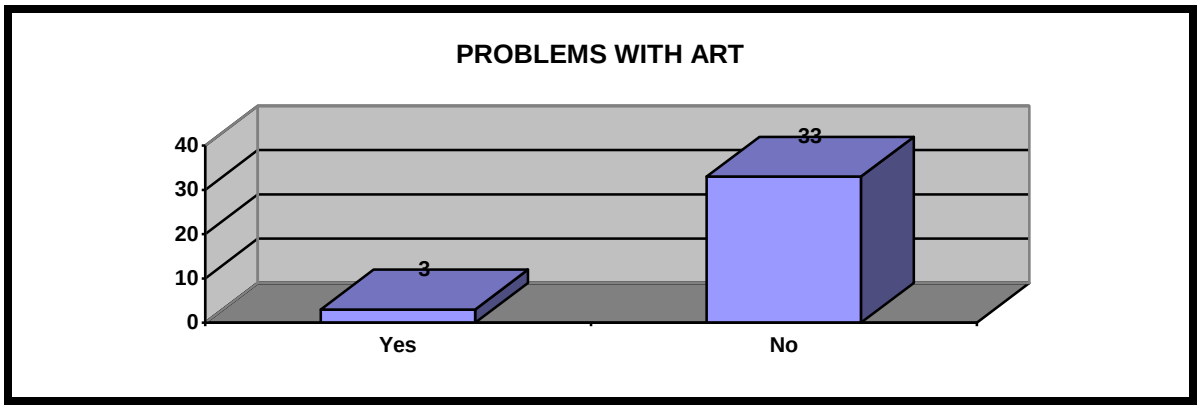

Figure 11: Bar Chart Indicating problems encountered with ART by patients

From Figure 11, it can be seen that the majority of the participants do not experience problems with ART intake. This may indicate that ART intake is not a contributing factor to poor adherence.

4.4 Adherence Reminders

4.4.1 What is used to remember treatment plan

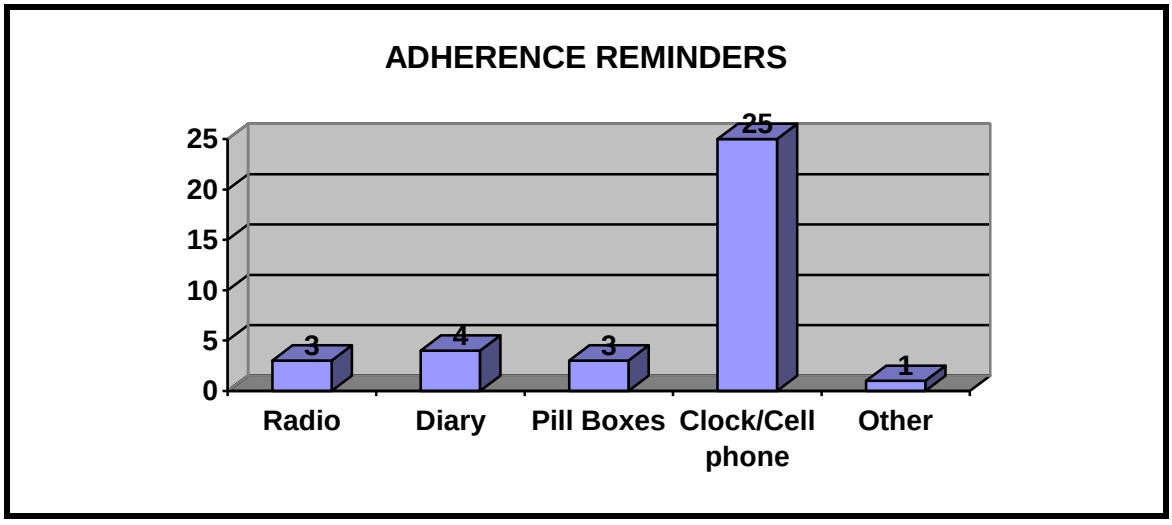

Figure 12: Bar Chart showing adherence tools used by patients

Adherence reminders used by participants were as follows:

- Radio : 8.3%
- Medicine diary : 11.1%
- Pill boxes : 8.3%
- Alarm clock/cell phone : 69.4%
- Other : 2.8%

As shown in Figure 12, the most used reminder has been found to be the cell phone alarm which may be a good way to remind participants, since most of them seem to carry cell phones for communication purposes.

4.4.2 Availability of Adherence Partner

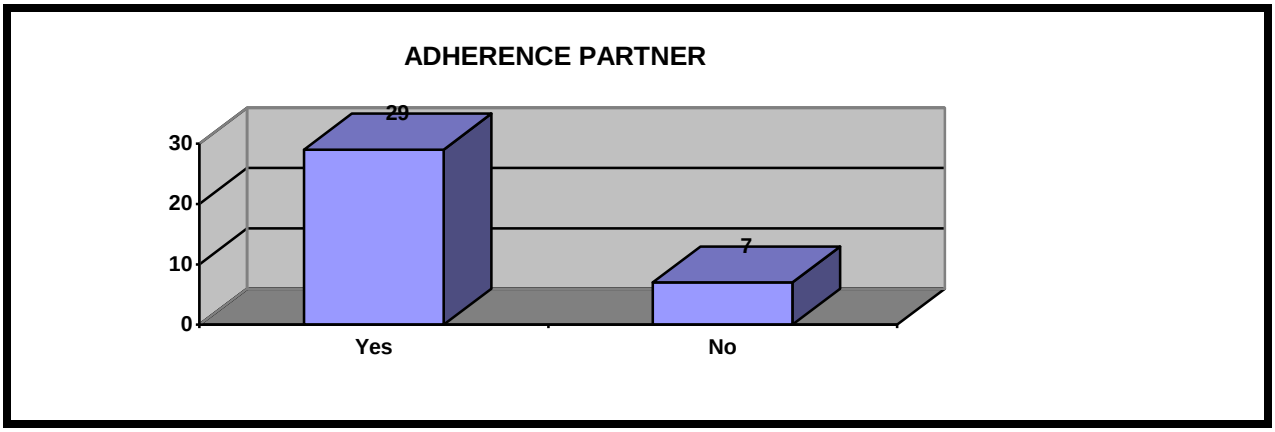

Figure 13: Bar Charts depicting if patients had adherence partners

On being asked if they had adherence partners, this is how participants responded:

Yes	80.6%
No	19.4%

As indicated in Figure 13 above, the vast majority of respondents have adherence partners.

The above findings indicate that adherence reminders may not be an issue as far as poor adherence is concerned.

4.5 Storage

4.5.1 Storage of ART

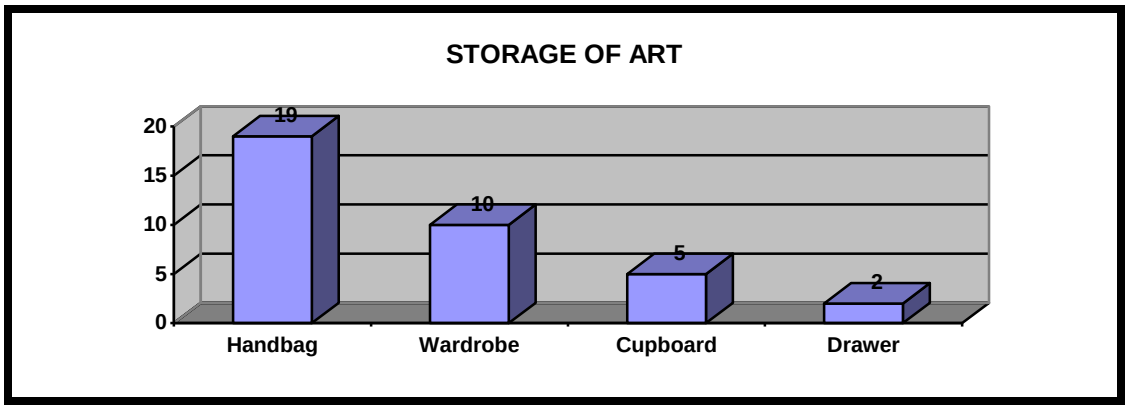

Figure 14: Bar Chart indicating how patients keep ART

Asked about how safely patients kept their ART, the following were their responses:

- Hand bag : 52.8%
- Wardrobe : 27.8%
- Cupboard : 13.9%
- Drawer : 5.6%

As indicated in figure 14, the majority of the participants keep their treatment in their hand bags, which may be a good way to remind them to take their treatment, since most of them seem to be carrying their hand bags all the time.

4.6 Transport Factors

4.6.1 Travel expenses

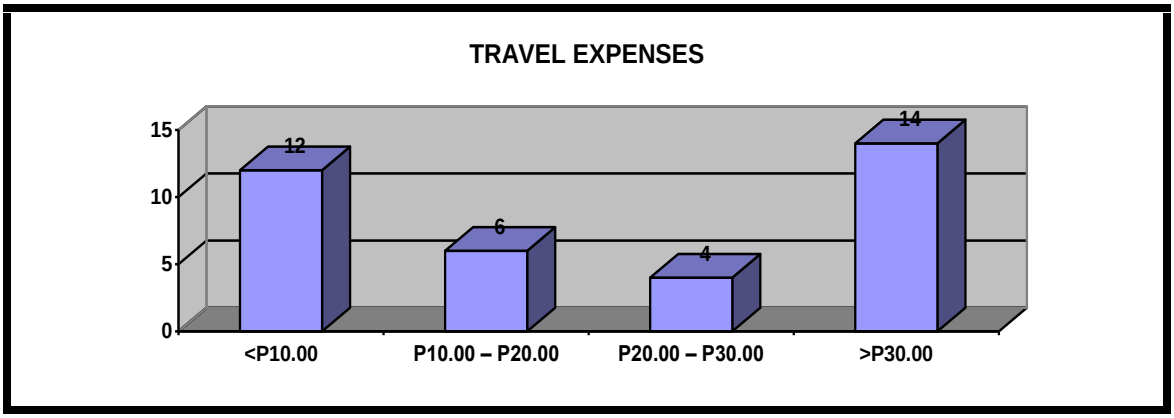

Figure 15: Bar Chart showing how much patients spend on reaching for ART

On being asked on how much they spent to cover travel expenses when they visited the facility, this is how patients responded:

Paid less than P10.00	33.3%
Paid between P10.00 and P20.00	16.7%
Paid between P21.00 and P30.00	11.1%
Paid between P31.00 and P140.00	38.9%

Deduced from Figure15, on average, patients spend about P46.00 on transport per visit to the clinic. The majority of respondents that visit MASA clinic work on farms and cattle posts as herdsmen. According to Botswana Labour Act (2005), the minimum wage for these workers is P408.00 per month. When comparing the average transport costs to visit the clinic to the average monthly income, it seems that a big portion of their income is spent on transport. Thus, respondents might not always have money available to cover transport costs to the clinic. Transport costs may be a contributing factor to poor ART adherence.

4.6.2 Transport Problems

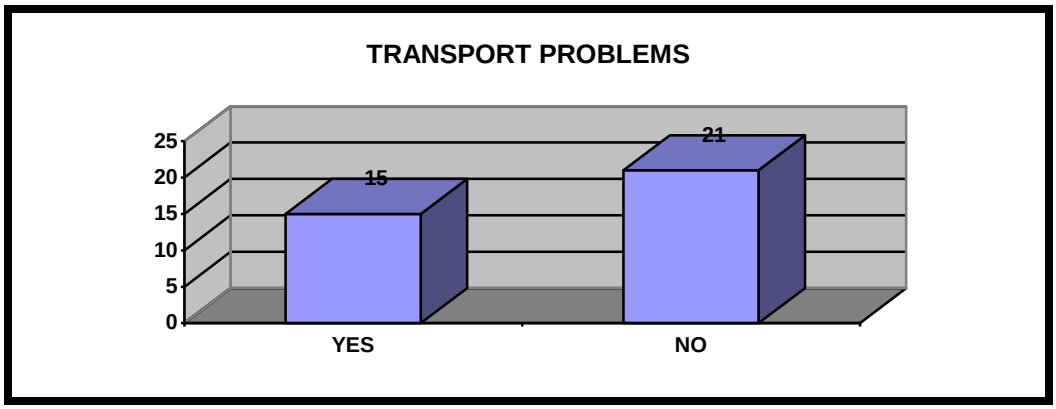

Figure 16: Bar Chart depicting if patients experienced transport problems

On being asked if they experienced any transport problems this is how patients responded:

Yes	41.7%
No	58.3%

Deduced from the narrative answers to this question, the above finding may be misleading, as some participants indicated that stay close to the clinic and as such do not need transport.

The results seem to indicate that patients who stay in villages along tarred roads do not experience transport problems, since transport is readily available. On the other hand, respondents who come from cattle posts, lands, farms and villages indicated they do suffer from transport problems. They predominately have to use gravel roads which are often not well maintained. Respondents also mentioned the areas where they live often have little or no public transport available because of the bad condition of roads. As a result, they have to depend on private vehicles to access their drugs. Other times, when respondents do have money for transport, often there is no accessible transport available.

4.7 Stigma Factors

4.7.1 Treated differently

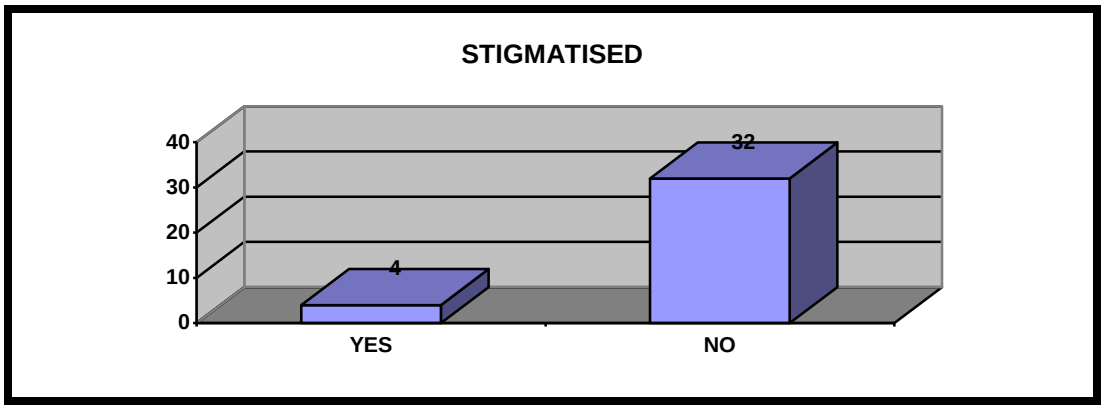

Figure 16: Bar Chart indicating if patients are treated differently because of their positive HIV status

When participants were asked if they have ever had an experience of being treated differently because of their positive HIV status, the following is how they responded:

Yes	11.1%
No	88.9%

From the above findings, it seems that issues of stigma may not be a contributing factor to poor ART adherence.

Participants who said were treated differently because of their positive HIV status gave the following explanations:

- "Even if I cook, some of my relatives to not eat the food saying they do not eat food prepared by an HIV positive person"
- "At work when I ask for permission to visit the hospital, I am told that I always visit the hospital and this reduces my work performance".
- Some people in the village make fun of my positive HIV status. I always respond that at least I know my HIV status and not them who are in the dark".

4.7.2 Necessary Support

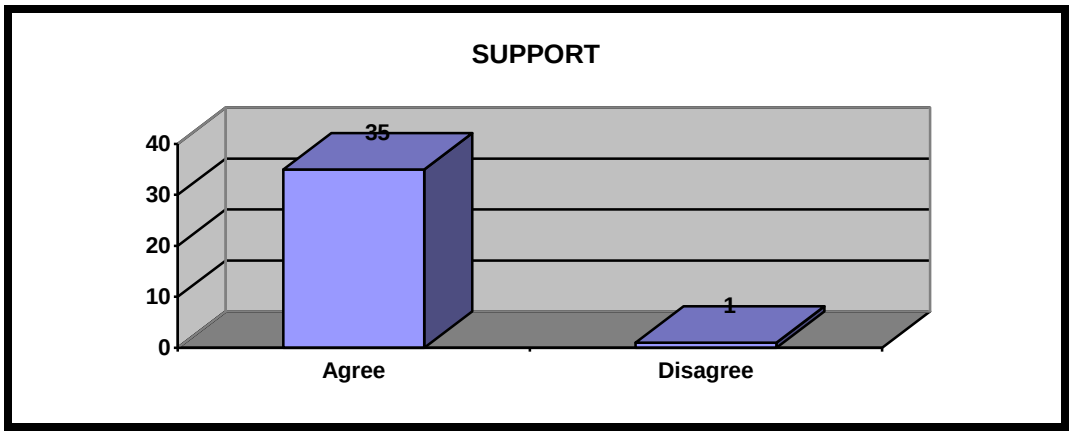

Figure 18: Bar Chart indicating if patients get the necessary support

When asked if they get all the necessary support from family, friends, colleagues and health workers, patients responded like this:

Yes : 97.2%

No : 2.8%

According to Figure 18, the majority of the respondents received all the necessary support from family, friends, colleagues and health workers. This has revealed that patients on ART may have good support structure and that lack of support may not be a contributing factor to poor ART adherence.

4.8 Health Care Provider Factors

4.8.1 Provision of excellent service

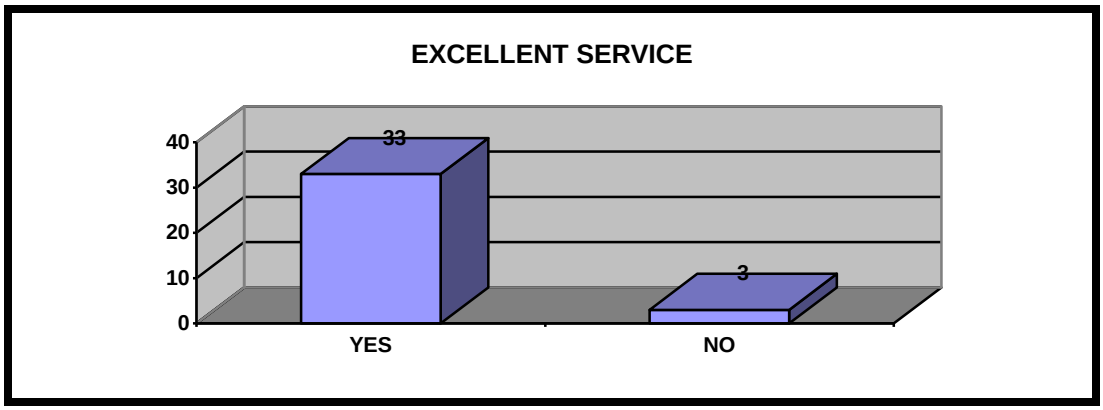

Figure 19: Bar Chart depicting if health workers are providing excellent service

The majority of participants agreed that they received good service from health care providers.

4.8.2 Time spent at the clinic

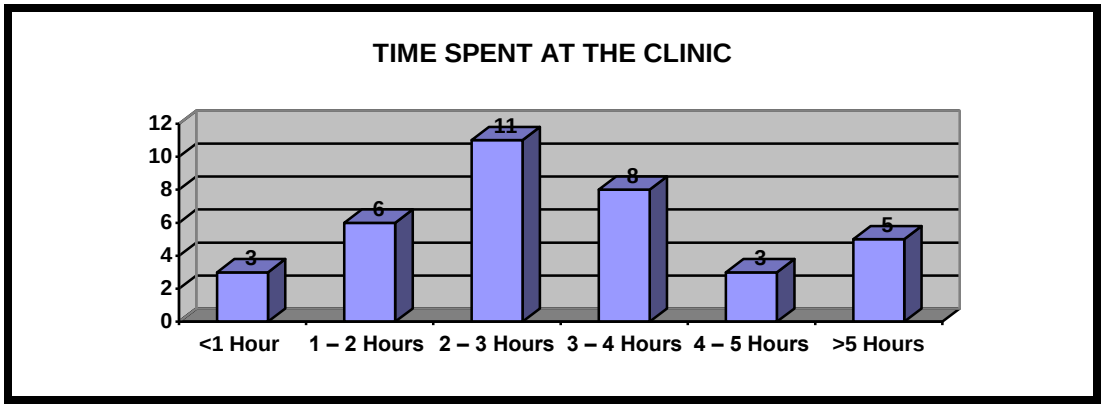

Figure 20: Bar Chart indicating time spent at the clinic during last visit

On being asked on how much time they spent altogether at the clinic whey they last came for review, this is how participants responded:

<1 hour : 8.3%

1-2 hours : 16.7%

2-3 hours : 30.5%

3-4 hours : 22.2%

4-5 hours : 8.3%

>5 hours : 13.9%

From the chart it can be deduced that most participants spent between 2 and 4 hours.

4.8.3 Waiting long before being attended

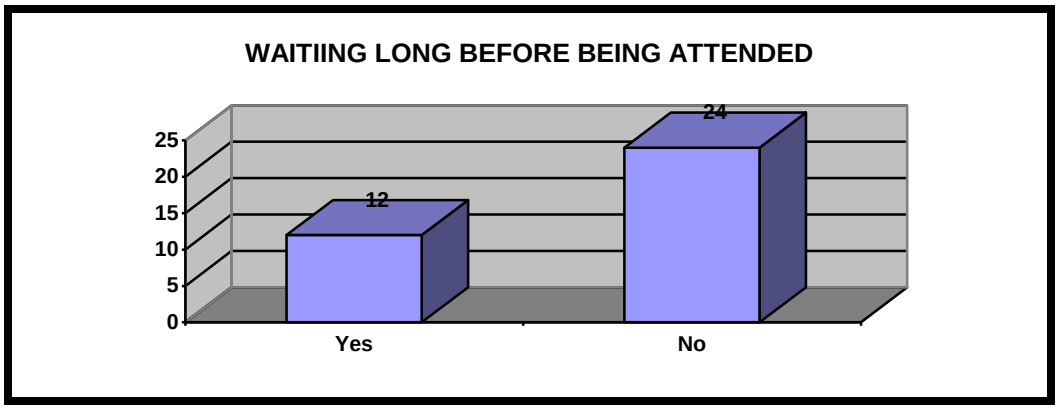

Figure 21: Bar Chart indicating if patients wait long before they are attended

On being asked if they had to wait long before being attended, this is how participants answered:

Yes : 33.3%

No : 66.7%

From Figure 21, it can be deduced that the majority of the patients felt that they had to wait long before being attended to in the health care facility.

4.8.4 Income Loss

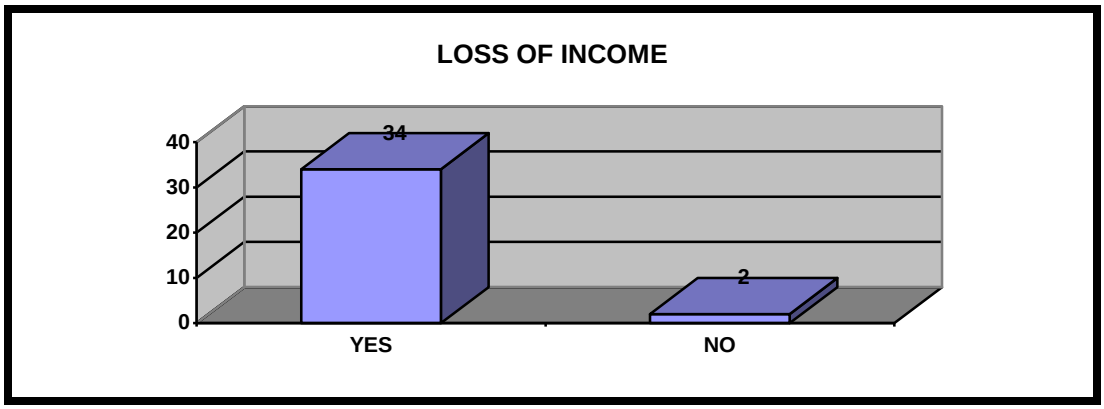

Figure 22: Bar Chart indicating if there is any loss of income as a result of coming to the clinic

On being asked if they lose of income as a result of coming to the clinic, this is how participants responded:

Yes	:	88.9%
No	:	5.6%

As indicated in Figure 22, the majority of respondents felt that they spend too much.

4.9 Religious Factors

4.9.1 Influence of religion

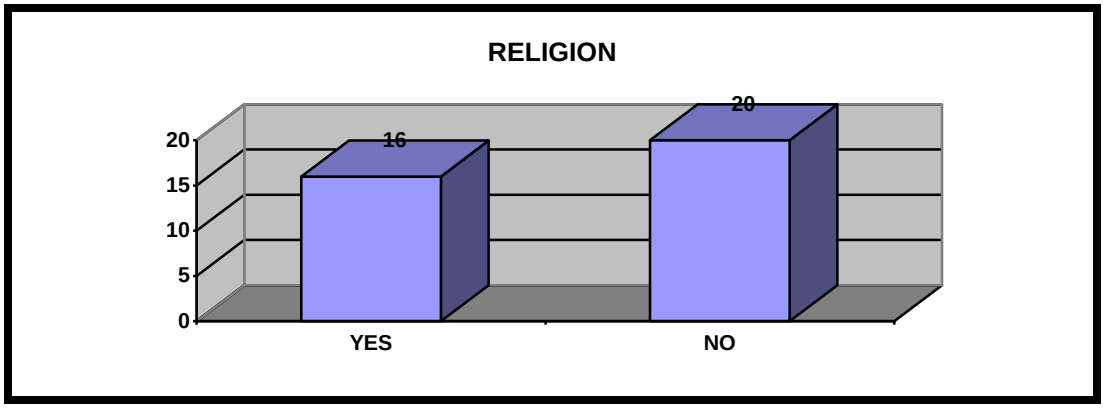

Figure 23: Bar Chart indicating if patients' religion influences the way they take ART

On being asked if religion influences how they take ART, this is how participants answered:

Yes	:	44.4%
No	:	55.6%

It was ascertained that those respondents that answered "yes" to the question, may actually have experienced the influence of religion in a positive way. According to some of the participants, at their church they were encouraged to know their status and enrol in the ART programme if found to be HIV positive. Those on ART are encouraged to take their treatment as prescribed and to keep appointments. From their responses religion may have a positive influence in the way they take ART. This is supported by Sharon (2006), in their study which revealed that certain religious practices are positively associated with adherence.
In this study, it seems that religion may not be a contributing factor to poor ART adherence.

4.10 Safe Sex Practice

4.10.1 Practice of safe sex

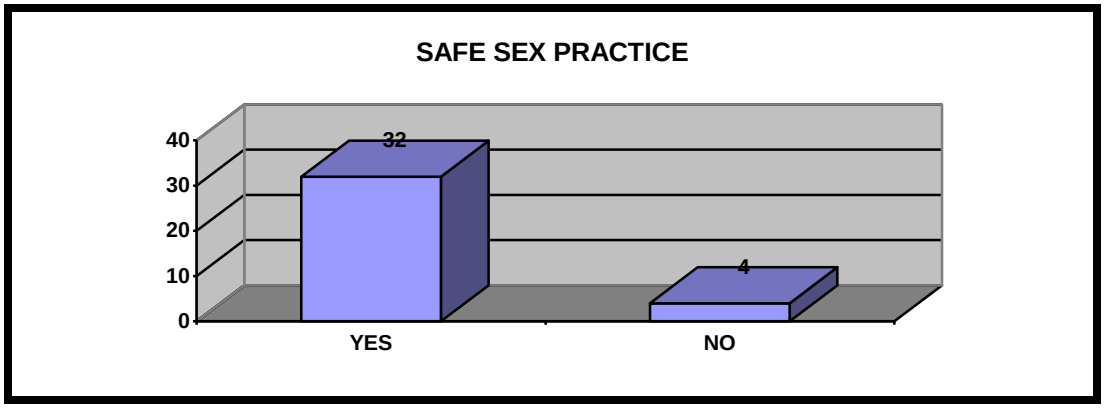

Figure 24: Bar chart showing if patients practice safe sex

Participants on being asked if they practice safe sex, and this is how they responded:

Yes	:	88.9%
No	:	11.1%

From Figure 24, it can be deduced that the majority of participants practiced safe sex. Of those that indicated that they do not practice safe sex, the following were the reasons:

- Married and as such as a woman has no control on sexual issues
- Partner refuses to use condoms
- He and her partner have no other sexual partners and as such there is no need to use condoms

Of those indicated that they do practice safe sex, the following reasons were given:

- Prevention of STIs
- Prevention of re-infection
- Prevention of pregnancy
- Do no want to decrease their CD4 count

Practising unsafe sex in patients on ART predisposes one to repeated infections and can result in one contracting resistant HIV strains which can make it difficult to get ARVs which one can respond to.

The above findings indicate that the majority of the respondents practised safe sex. This means that safe sex practice may not be a contributing factor to poor ART adherence.

4.11 Additional Factors

4.11.1 Missed doses

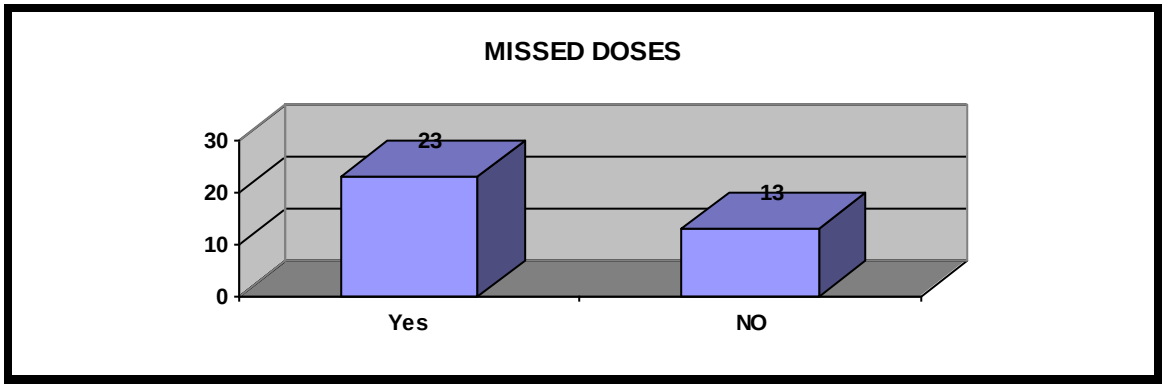

Figure 25: Bar Chart indicating if patients had missed doses

Participants were asked if there has been a time that they had missed doses. The response was that the majority of participants have missed doses. The following reasons were given for missing doses:

- Transport costs
- Forgotten
- Lack of transport
- Alcohol intoxication
- Outside town

4.11.2 What motivates patients to take ART?

On being asked what motivates them to take ART, 47.2% of participants responded that ART has improved their health and 52.8% of participants said ART has prolonged their lives. This seems to be an indication that ART is making a difference in their quality of life.

4.11.3 What should be done to curb poor ART adherence

Participants gave the following responses when being asked what should be done to curb poor ART adherence:

- ART to be rolled even to the farthest places : 27.8%
- Continuous education : 27.8%
- Patients to be issued with 2 months' supply to reduce transport costs : 11.1%
- For habitual defaulters, treatment should be stopped : 5.6%
- Provision of transport : 11.1%
- Train more health personnel for ease of ART rollout : 5.6%
- Those who default should be made to pay for ART : 2.8%
- Waiting time should be reduced : 5.6%
- Give co—formulated drugs where possible : 2.8%

The factor that most influenced adherence to ART was transport costs (25%). Patients said they did not have money for transport to visit the facility for follow-up and refill. The next factor was forgetfulness. Patients said they were busy and as such forgot to take

ART especially the evening doses. One patient even said she was hungry at the time that she was supposed to take her evening dose and later forgot to take her ART after having a meal. The findings are supported by Garcia, et al (2006), in a study conducted in Brazil and it was found that one of the reasons for missing doses was “simply forgetting”.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study was conducted in order to establish factors that contribute to poor ART adherence. Although the sample was small (36), to derive conclusions from, at least some light could be shed on why patients do not adhere to ART. The format that was used in Chapter 4 will be followed to draw conclusions and recommendations will follow.

5.2 Demographic Characteristics

The study sample was made up of 52.8% female and 47.2% males. The majority of the respondents were between the ages of 31 and 40.Out of the 26 respondents, 61.1% were single, 11.1% married and 27.8% living together. Amongst the participants, 88.9% had some form of religion and 11.1% were not affiliated to any form of religion. It seemed that most of the participants received a good education.

5.3 Profile of Patients

The findings in this study seem to show that the general health profile pertaining to ART intake of respondents can be summarised as follows: Most respondents have been on ART for a long time and have to take their medication twice a day. The majority have to take at least three or four tablets daily. Most respondents indicated that they are not experiencing any problems with their ART intake.

5.4 Adherence Reminders

Every patient that participated in the study had some form of tool that he/she used to remember time for medications. The majority of patients had adherence partners. Despite having the above, most of the patients who missed their doses of ART gave forgetfulness as the reason. This is a peculiar finding since all the respondents indicated that they had something to remind them to take ART.

5.5 Storage

From the results in this study, it seems that medications are generally well kept. The storage places can be easily reached and the medications should not lose their potency in these storage areas (i.e. hand bags and wardrobe). This might be an indication that the storage of medications might not be a contributing factor to poor ART adherence.

5.6 Transport Issues

Transport is one of the issues that might be a contributing factor to poor ART adherence. This factor was identified as a possible contributing factor to poor ART adherence in various parts of the questionnaire: This is evident from Section 4.2.7; the section on travel expenses and the section on additional factors.

Most of the respondents stay far or very far from the ART site and as such have to spend a lot of money on their monthly visits to the ART site. When you compare how much they spend on average per visit to the ART site and the average monthly income, a big portion is spent on transport alone.

Transport is only available for those who stay along tarred roads. Those who come from cattle posts, farms, lands and some villages suffer transport problems as they have to use gravel roads which are not well maintained. No public transport is available in these roads. Patients therefore depend on private vehicles to access their drugs. At times patients have money but no accessible transport is available.

5.7 Stigma Issues

The majority of the patients were able to get all the necessary support from family, friends, colleagues and health workers and were not treated differently because of their positive HIV status. These findings indicate that stigma may not be a hindrance to poor ART adherence.

5.8 Health Care Provider Factors

The findings have revealed that long waiting times can have an impact on adherence as people who get delayed might not want to come back. This is supported by Kip, et al (2009), who stated that barriers to ART included long waiting hours at the clinics.

5.9 Religion

It was ascertained that respondents who answered positively to the question may have had experienced influence o religion in a positive way. In this study, it seems that religion may not be a contributing factor to poor ART adherence.

5.10 Safe Sex Practice

Generally patients are having protected sex which is a good practice since patients may not be re-infected. This reflects that safe sex practice may not impact on poor adherence.

5.11 Additional Factors

Despite knowing the benefits of ART, some of respondents still reported missing some doses of ART. Many reasons were given for missing doses. Transport issues and forgetfulness were the most occurring. For transport they said they did not have money for transport or they had money and transport was not available. As for forgetfulness, this was a peculiar finding since all the respondents indicated that they had something they could use to remind them to take medications.

Respondents also gave ideas on how the problem of poor ART adherence can be curbed. Most of the ideas that came out were around solving transport problems. These included ART roll-out, giving patients 2 months' supply, provision of transport and training of more health personnel for ease of roll-out.

5.12 Summary

From this study, it has been revealed that the following factors may play a role in poor ART adherence: transport issues, forgetfulness, and long waiting hours.

The main finding of this research was that many factors thought to be contributing factors to poor adherence, do not seem to have an influence on ART adherence at Jwaneng Mine Hospital. This is evident from the results in the profile of respondents section as well as respondents' answers pertaining to possible contributing factors identified by the researcher. These possible factors identified by the researcher that do not seem to contribute to poor adherence include adherence reminders, religion, ART storage, stigma and safe sex practices. Yet, the fact remains that the general adherence of patients at Jwaneng Mine Hospital is low. Explanations on why this may be include that the sample is not representative of the population as a whole or that other contributing factors may not have been identified in this study. This warrants further investigation.

5.13 Recommendations

5.13.1 Transport issues

This study indicated that that transport might be one of the factors contributing to poor ART adherence. To curb this problem, Art should be rolled even to the remotest areas. Where possible, patients on ART should be provided with transport.

More nurses should be trained on prescription and dispensing of ART so that roll-out of ART can be made easy as they can be posted to areas that are out of reach presently.
Patients should be provided with at least two months' supply of ART to reduce the number of visits to the health facility. By so doing transport expenses will be reduced.

5.13.2 Adherence Reminder issues

Despite having adherence tools and adherence partners, the study revealed that forgetfulness might be one of the factors contributing to poor ART adherence. It is therefore recommended that patients should be encouraged to choose the time that is convenient for them and a reminder like alarm clock or use of alarm from their cell phones as these days most of the people possess cell phones. This can greatly improve ART adherence.

Patients should be given lectures on how to set the alarm clock and the alarm from the cell phones as it might be possible that they might possess these adherence tools but do not know how to operate them.

5.13.3 To the Ministry of Health and other Stakeholders

Transport problems seemed to be cropping up in the findings of the study as one of the factors that might be having influence on poor ART adherence. It is therefore recommended that there be Provision of income generation activities geared towards people living with HIV/AIDS (PLWHA) to ensure financial security as this will enable them to pay for transport costs.

Antiretroviral therapy should be rolled even to the lowest level health facilities. This will ease congestion at the hospital and hence waiting period reduced. This will make it easy for patients to reach for ART since no travelling expenses will be involved.

5.13.4 Suggestions for Further Research

As mentioned, main findings of this research was that many factors thought to be contributing to poor adherence, do not seem to have an influence on ART adherence at Jwaneng Mine Hospital. Therefore, suggestions for future research include conducting a similar type of study on a larger scale to verify the results of this study. Also additional factors (thought to be contributing to poor ART adherence) not addressed in this research, should be included as a part of future research. Lastly, it might be a good idea to include focus group discussions as part of the research design. This will enable respondents to give a firsthand and personal account of what the contributing factors to their poor adherence may be.

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ANNEX 1

QUESTIONNAIRE

TITLE: Factors contributing to poor anti retroviral therapy adherence among patients at Jwaneng Mine Hospital MASA Clinic in Botswana.

Introduction

I wish to express my appreciation for your willingness to participate in this study. This study will not have any negative effects on you. You have the right to participate or not and you can withdraw from the study anytime if you so wish. Your information will be kept confidential. The interview time will be kept as minimal as possible to avoid exhaustion and unnecessary delay on your side (about thirty minutes). You have the right to request a summary of the results and to ask questions about anything concerning this research. The researcher promises to protect the rights of all subjects. Your cooperation is highly appreciated in this regard.

Please answer all the questions

SECTION I:

DEMOGRAPHIC DATA

Age

21 - 30 years ----------

31 - 40 years ----------

41- 50 years ----------

51 – 60 years ----------

61 years and above ----------

Gender

Male ----------

Female ----------

Marital status

Single ----------

Married ----------

Separated ----------

Divorced ----------

Widowed ----------

Living together ----------

Educational level

None ----------

Non formal ----------

Primary ----------

Secondary ----------

Tertiary ----------

Occupation

Professional ----------

Skilled ----------

Semi-skilled ---------

None ----------

Religion

Catholic ----------

Protestant ---------

Pentecostal ---------

Others (state) ----------

Residence

Near to the health facility ----------

Far from the health facility ----------

Very far from the health facility ----------

SECTION 11

1. When did you start taking anti retroviral therapy? ----------
2. How often do you take your drugs in a day?

   Once ----------

   Twice ----------
3. How many pills do you take in a day? ----------
4. Do you experience problems with your medications?

   Yes ----------

   No ----------

If yes, tell me about what sort of problems you experience

5. What do you use to remember your treatment plan?

   Put a calendar on a refrigerator door ---------

   Radio ----------

   Keep a medicine diary ----------

   Pill boxes ----------

   Alarm clock or cell phone ----------

   Any other (state) ---------

6. Do you have anyone to remind you to take your medications?

   Yes ----------

   No ----------

7. How do you keep your drugs safe?

   ---

8. How much do you pay to cover your travel expenses when you visit the clinic?

   P ----------

9. Do you experience transport problems when trying to access drugs at the hospital

   Yes ----------

   No ---------

   If yes, explain ---

   ---

10. Have you ever had any experience of being treated differently because of your Positive HIV status?

    Yes ----------

    No ----------

    If yes, explain ---

    ---

11. I am able to get all the necessary support from family, friends, colleagues at

work and health workers.

Strongly agree ---------

Agree ----------

Strongly disagree ---------

Disagree ---------

12. Health personnel at the clinic provide excellent service.

Yes ---------

No ---------

13 How much time did you spend altogether at the clinic when you last came for Review?

Less than 1 hour ---------

1 – 2 hours ---------

2 - 3 hours --------

3 – 4 hours ---------

4 – 5 hours ---------

More than 5 hours ---------

14. Did you have to wait for long before being attended to?

Yes ----------

No ---------

15. Do you lose income as a result of your coming to the clinic?

Yes ----------

No ----------

If yes, explain how ----------

---

16. Religion influences the way you take treatment

Yes ----------

No ----------

If yes, explain how ----------

---

17. Do you practice safe sex?

Yes --------

No --------

Give reasons for either answer ----------

---

18. Is there a time that you have missed some doses?

Yes ----------

No ----------

If yes, why?

---

19. What motivates you to take anti retroviral therapy?

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20. What do you think should be done to curb the poor adherence to anti retroviral therapy problem?
